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Naval Facilities Engineering Command

Abstract of an Accident

98-4

ACCIDENT TYPE: **Fall Mishap**
INJURY: **Serious broken left and right ankles, broken leg and vertebrae**
TYPE OF WORK: **Resurfacing 100 ft. high tower**
EQUIPMENT: **Pneumatically powered, suspension scaffold (Spider Model PST-17)**

DESCRIPTION OF MISHAP

The two contractor employees involved in the incident were using a single point, pneumatically powered, suspension scaffold (Spider Model PST-17) to gain access to the platforms erected to perform the hydroblasting of the structure. As the two employees were making an assent to the platforms (Photo #1) an apparent failure in the rigging for the single point scaffold system occurred. A failure of the cable system caused the single point scaffold to fall approximately 31 feet onto a lower surface (Photo #2). One employee escaped injury by hanging onto an adjacent structural member. The second employee fell the approximate 31 feet and suffered severe injuries; broken left and right ankles, a broken leg and vertebrae.

DIRECT CAUSE

- Preexisting conditions for the single point scaffold;
  - Brake system for the scaffold was damaged (Photo #3 & 4),
  - Cable in level winding winch not properly wound and entangled (Photos #5 & 6),
  - Equipment not properly maintained and inspected, no service records,
  - Fall protection equipment not provided.

INDIRECT CAUSES

- Administrative and personnel training issues;
  - Formal Fall Protection Plan (including Rescue Plan) not submitted or approved,
  - Fall restraint system not used, contractor personnel not tied to lifelines,
  - No record of initial employee safety training or in-depth safety meetings,
  - New contractor's employees only received training for tying off properly,
  - No formal training or operating procedures for the equipment.

LESSONS LEARNED / RECOMMENDATIONS

- Ensure Fall Protection Plan (FPP), including Rescue and Escape Plan, exists.
- Conduct formal review of the FPP and rescue plan.
- Ensure that contractor provides training in general safety, including fall protection, to his employees exposed to fall hazards.
- Provide specific refresher training for fall prevention for high hazard exposures.
- All employees utilizing a scaffold shall be provided with a fall arrest system.
- Ensure any person utilizing scaffold shall have an independent lifeline.
- Ensure that each project designate a full-time Competent Fall Protection Person.
- The competent person shall provide and document daily and weekly training for all contractor personnel.
- Ensure that all equipment be maintained to be in good and safe working condition and in accordance with manufacturer's recommendations.
- Ensure the contractor takes immediate action to repair or replace damaged equipment.
- All damaged or unsafe equipment shall be removed from service and tagged "Not For Use" or "Unsafe".

FALL PROTECTION SYSTEM REQUIREMENTS (References)

Each employee on walking/working surfaces (horizontal and vertical surfaces) with an unprotected side or edge which is 6 feet (1.8m) or more above a lower level, shall be protected from falling by use of a guardrail system, safety nets or personal fall arrest system. IAW OSHA, 29 CFR, Parts 1910, 1926 and Corps of Engineers Manual (COE) Manual EM 385-1-1. Section 21 Safe Access and Fall Protection.

PHOTO 1

The two subcontractor's workers were trying to gain access to the platforms shown at the top of this photo when the single point scaffold fell 31 feet.

PHOTO 2

The area where the scaffold fell onto roof of Helix House showing the debris left from the accident.

PHOTO 3

The braking system for the failed single point scaffold.

PHOTO 4

The damaged single point scaffold.

PHOTO 5

A good condition single point scaffold showing the cable wound properly and systematically inside the winch.

PHOTO 6

The damaged single point scaffold indicating how the cable was improperly wound in the winch.

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